

19 January 1960

Dear Doc,

STATINTL      Attached hereto is our recommendation in regard to  
procurement of V/H sensor heads. We are ready to go ahead with  
[redacted] as soon as contractual approval is granted.

Thanks,

*Milt*

Milt

MDR:mb

cc: CMH

An automatic passive V/H measuring system more accurate than present state-of-the-art is an absolute necessity for this project. There are three potential systems: ( 1 ) An automatic driftsight;

( 2 ) A correlation system;

and ( 3 ) the fixed grid sensor.

STATINTL  
( 2 ) and ( 3 ) are available to us. ( 2 ) has been developed by [REDACTED] and we are working on ( 3 ).

Laboratory testing will provide a limited test of any V/H sensor, but such testing is unfaithful in simulating the true effect of cliffs, clouds, atmospheric contrast reduction and spectral distribution of energy. We have largely exhausted the usefulness of laboratory testing, having shown that the grid sensor is capable of creating signals of the required nature when moving aerial negative scenes are used to simulate moving terrain.

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The correlation system [REDACTED] has, as an IR sensing system, been carried to an advanced state of development under a [REDACTED] contract. However, IR will not be very sensitive to ground signals in our intended application. It would therefore be desirable to modify this type of sensor to operate on visible radiation since the basic system is known to work; it is only necessary to determine its actual signal generation capacity in the air.

We are convinced that the best plan to develop an accurate V/H sensor now requires a comparative flight test. The details of such a test will be specified within one month, but might be ( for example ):

( 1 ) Fly both sensors above tropopause at available V/H rate;

and ( 2 ) Include camera, gyro sensors, and recorder to provide basic data.

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The first step, however, requires the procurement of correlation sensor heads since the delivery on these items far exceeds other contemplated equipment. We recommend that we procure the [REDACTED] correlation sensing head. [REDACTED] is a sole source for this item. The concept is an original one with [REDACTED] and the experimental work was done under a contract with [REDACTED]. We do not have detailed information to build such a head and in order for any firm other than [REDACTED] to build the head, a development program would be necessary. Therefore, we must conclude that at the present time [REDACTED] has a unique capability to build this sensing head. Moreover there is a possibility that the complete [REDACTED] V/H system may be employed on the project. The quoted cost on a CPFF basis is [REDACTED] plus [REDACTED] per man month for any engineering assistance.

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